SATO
DCS & Labeling Worldwide

CG4 Series

English
German
Chinese
Korean

CG408DT
CG412DT
Direct Thermal Type
203 dpi/305 dpi

CG408TT
CG412TT
Thermal Transfer Type
203 dpi/305 dpi

Quick Guide

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FCC WARNING

English

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

– Reorient or relocate the receiving antenna.
– Increase the separation between the equipment and receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio/TV technician for help.

AC power cord with ferrite core must be used for RF interference suppression.

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Safety Precautions

This section describes how to use the printer safely. Be sure to read it carefully before using the printer.

Pictographic Symbols

This instruction manual and the printer labels use a variety of pictographic symbols to facilitate safe and correct use of the printer and to prevent injury to others and property damage. The symbols and meanings for them are given below. Be sure to understand these symbols well before reading the main text.

Warning	Ignoring the instructions marked by this symbol and erroneously operating the printer could result in death or serious injury.
Caution	Ignoring the instructions marked by this symbol and erroneously operating the printer could result in injury or property damage.

Example Pictographs

The △ pictograph means "Caution is required." A specific warning symbol is contained inside this pictograph (The symbol at left is for electric shock).

The ⃠ pictograph means "Should not be done." What is specifically prohibited is contained in or near the pictograph (The symbol at left means "Disassembly prohibited").

The ● pictograph means "Must be done." What is specifically to be done is contained in the pictograph (The symbol at left means "Unplug the power cord from the outlet").

English

⚠ Warning

Do not set on an unstable area

- Do not set on an unstable area, such as a wobbly table or slanted area or an area subject to strong vibration. If the printer falls off or topples over, it could injure someone.

Do not place containers full of water or other liquid on the printer.

- Do not place flower vases, cups, or other containers holding liquids, such as water or chemicals, or small metal objects near the printer. If they are spilled and get inside the printer, immediately turn off the power switch, unplug the power cord from the outlet, and contact the store, dealer, or Support Center. Using the printer in this condition could cause a fire or electric shock.

Do not put objects inside the printer

- Do not insert or drop in metal or burnable objects inside the printer's openings (cable outlets, etc.). If foreign objects do get inside the printer, immediately turn off the power switch, unplug the power cord from the outlet, and contact the store, dealer, or Support Center. Using the printer in this condition could cause a fire or electric shock.

Do not use other than the specified voltage

- Do not use other than the specified voltage. Doing so could result in fire or electric shock.

Always ground the connections

- Always connect the printer's ground wire to a ground. Not grounding the ground wire could result in electric shock.

Handling of the power cord

- Do not damage, break, or modify the power cord. Also, do not place heavy objects on the power cord, heat it, or pull it because doing so could damage the power cord and cause a fire or electric shock.
- If the power cord becomes damaged (core is exposed, wires broken, etc.), contact the store, dealer, or Support Center. Using the power cord in this condition could cause a fire or electric shock.
- Do not modify, excessively bend, twist, or pull the power cord. Using the power cord in such a condition could cause a fire or electric shock.

When the printer has been dropped or broken

- If the printer is dropped or broken, immediately turn off the power switch, unplug the power cord from the outlet, and contact the store, dealer, or Support Center. Using the printer in this condition could cause a fire or electric shock.

Do not use the printer when something is abnormal about it

- Continuing to use the printer in the event something is abnormal about it, such as smoke or unusual smells coming from it, could result in fire or electric shock. Immediately turn off the power switch, unplug the power cord from the outlet, and contact the store, dealer, or Support Center for repairs. It is dangerous for the customer to try to repair it, so absolutely do not attempt repairs on your own.

Do not disassemble the printer

- Do not disassemble or modify the printer. Doing so could result in fire or electric shock. Ask the store, dealer, or Support Center to conduct internal inspections, adjustments, and repairs.

Regarding the cutter

- Do not touch the cutter with your hands or do not put something into the cutter. Doing so could result in an injury.

Using the head cleaning fluid

- Use of flame or heat around the head cleaning fluid is prohibited. Absolutely do not heat it or subject it to flames.
- Keep the fluid out of reach of children to prevent them from accidentally drinking it. If the fluid is drunk, immediately consult with a physician.

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English

⚠ Caution

Do not place in areas with high humidity

- Do not place the printer in areas with high humidity or where condensation forms. If condensation forms, immediately turn off the power switch and do not use the printer until it dries. Using the printer while condensation is on it could result in electric shock.

Carrying the Printer

- When moving the printer, always unplug the power cord from the outlet and check to make sure all external wires are disconnected before moving it. Moving the printer with the wires still connected could damage the cords or connecting wires and result in a fire or electrical shock.
- Do not carry the printer with paper loaded in it. The paper could fall out and cause an injury.
- When setting the printer on the floor or a stand, make sure not to get your fingers or hands pinched under the printer feet.

Power supply

- Do not operate the power switch or plug in/unplug the power cord with wet hands. Doing so could result in electric shock.

Power cord

- Keep the power cord away from hot devices. Getting the power cord close to hot devices could cause the cord's covering to melt and cause a fire or electrical shock.
- When unplugging the power cord from the outlet, be sure to hold it by the plug. Pulling it by the cord could expose or break the core wires and cause a fire or electric shock.
- The power cord set that comes with the printer is especially made for this printer. Do not use it with any other electrical devices.

Top cover

- Be careful not to get your fingers pinched when opening or closing the top cover. Also be careful the top cover does not slip off and drop.

Print head

- The print head is hot after printing. Be careful not to get burned when replacing paper or cleaning immediately after printing.
- Touching the edge of the print head with bare hands could result in injury. Be careful not to become injured when replacing paper or cleaning.
- The customer should not replace the print head. Doing so could result in injury, burns, or electric shock.

Loading paper

- When loading roll paper, be careful not to get your fingers pinched between the paper roll and the supply unit.

When not using the printer for a long time

- When not using the printer for a long time, unplug the power cord from the outlet to maintain safety.

During maintenance and cleaning

- When maintaining and cleaning the printer, unplug the power cord from the outlet to maintain safety.

Caution

(1) Reproduction in any manner of all or part of this document is prohibited.
(2) The contents of this document may be changed without prior notice.
(3) Great care has been taken in the preparation of this document, but if any problems, mistakes, or omission are found, please contact the store or dealer where you purchased the printer.

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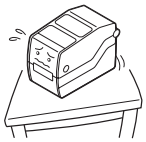
Precautions for Installation and Handling

Printer operation can be affected by the printer environment.
Refer to the following instructions for installation and handling of CG408/412 series.

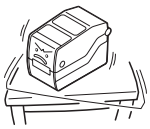
Select a Safe Location

Place the printer on a surface that is flat and level.



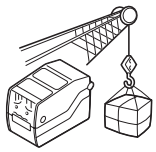
If the surface is not flat and level, this may result in poor print quality. This may also cause malfunction and shorten the life span of the printer.

Do not place the printer on a location that produces vibration.



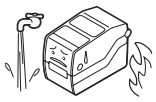
Do not carry the printer when the roll label is set. Giving serious vibration or shock to the printer may cause malfunction and shorten the life span of the printer.

Do not place the printer near crane or pressing machine.



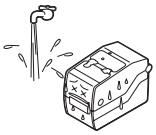
Machineries such as crane and pressing machine require large amount of power. This may cause electrical noise or voltage reduction. Avoid such locations to reduce the risk of malfunction or damage to the printer.

Keep the printer out of high temperature and humidity.



Avoid locations subject to extreme or rapid changes in temperature or humidity. Exposure to these conditions may cause electrical problems within the printer.

Do not place the printer in a location subject to water or oil.

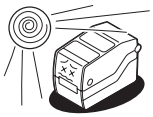


Do not place the printer in a location where it will be splashed with water or oil. Water or oil entering inside the printer may cause a fire, electric shock, or malfunction.

Avoid dust.

Dust buildup may result in poor print quality. This may cause not only malfunction but also shorten the life span of the printer.

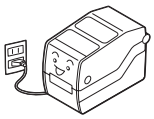
Keep out of direct sunlight.



This printer has a built-in optical sensor. Exposure to direct sunlight will make the sensor less responsive and may cause the label to be sensed incorrectly. Close the top cover when printing.

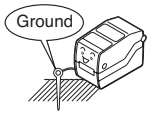
Power Supply

This printer requires an AC power supply.



Be sure to connect the printer to an AC power supply.
Failure to do so may result in miss operation or a malfunction.

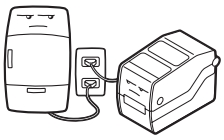
Connect the power cord to a grounded power outlet.



Make sure to have the facility equipped with the ground slot.

Provide a stable source of electricity to the printer.

Do not share the power outlets with other appliances such as a heater and refrigerator requiring a measurable amount of power. Also, avoid using the power outlet near where such appliances are plugged into. This may cause voltage reduction and malfunction.



English

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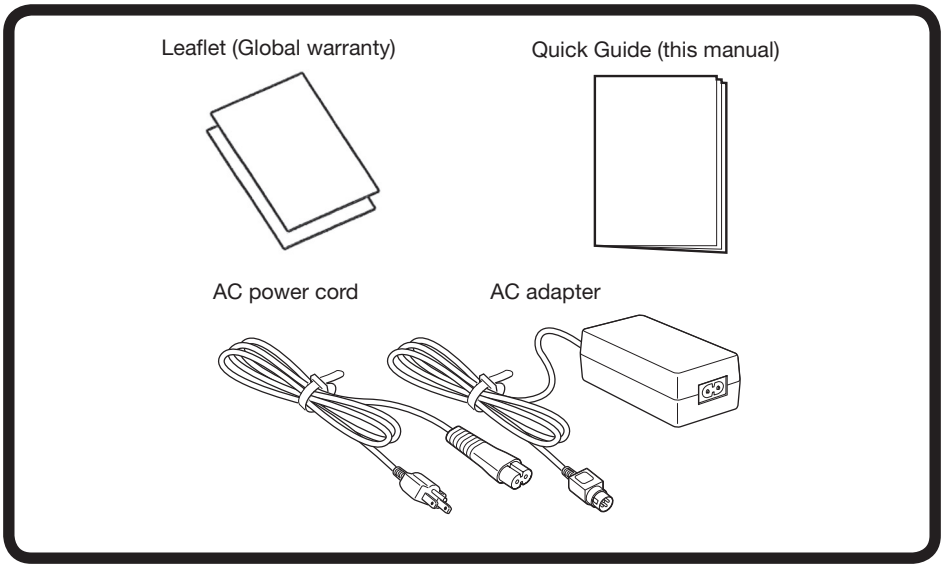
English

Checking Accessories

Make sure that you have received all of the following items in the package. If there are any accessories missing, contact your nearest dealer or the store where you purchased the printer.



English

▲ About the Box

Please retain both the box in which the printer was packed and the cushioning material (cushions that hold the printer in place). If you need to send in the printer for repair, repack it in this box.

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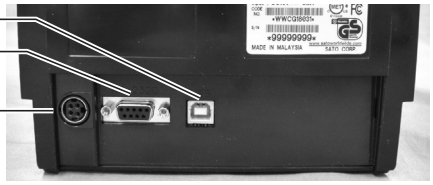
Names of Parts

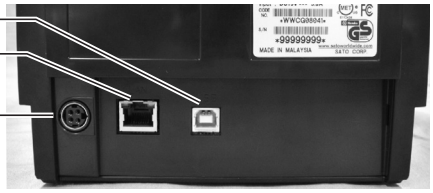
English

▲ Printer Unit (Unit Exterior)

▲ Back (USB + RS-232C Interface)



▲ Back (USB + LAN Interface)



▲ Back (USB + IEEE1284)

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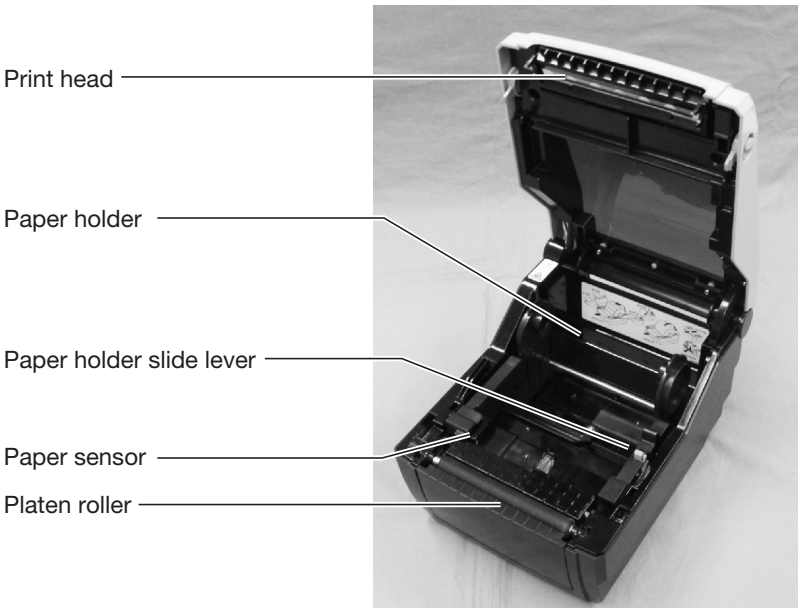
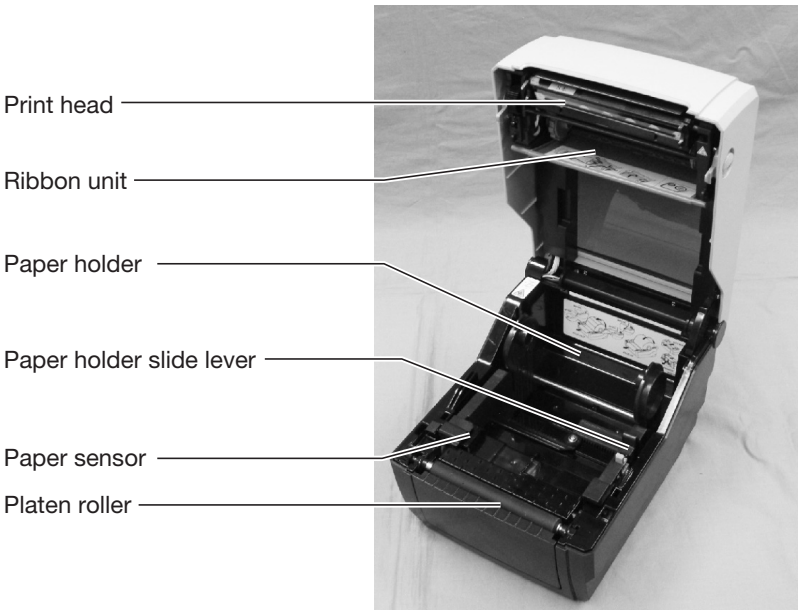
When Top Cover is Opened

▲ For CG408DT/412DT



▲ For CG408TT/412TT



English

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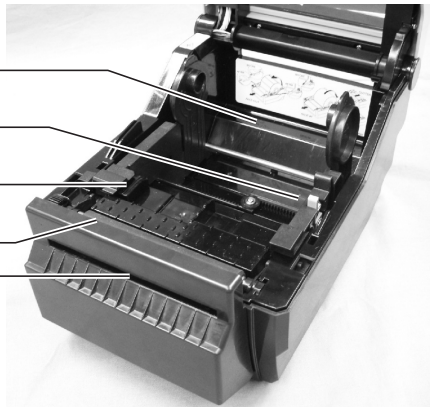
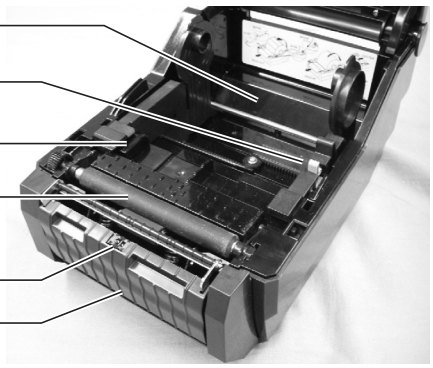
When Top Cover is Opened (Cutter Type (Optional))

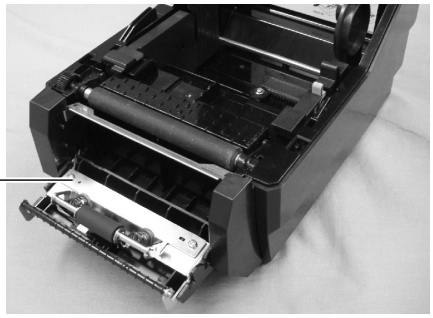


English

When Top Cover is Opened (Dispenser Type (Optional))



(When the dispenser unit is open)



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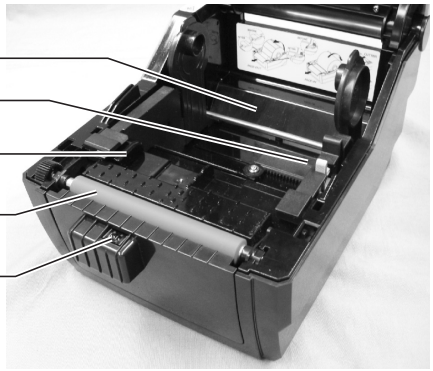
When Top Cover is Opened (Linerless Type (Optional))



English

▲ Operation Panel

POWER button
Press this button to turn the power on or off.

ON LINE (POWER) lamp
The lamp lights green when the printer is online and blinks green when the printer is offline.

ERROR lamp
The lamp lights or blinks red when an error is detected in the printer.

FEED/LINE button
Press this button to select the printer status (online/offline) or to feed the paper.

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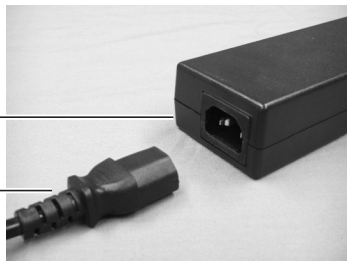
Turning On the Power

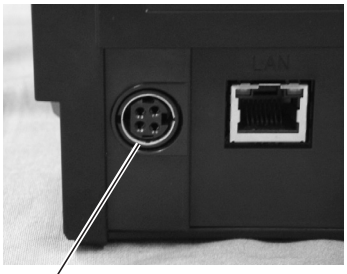
Power Setting

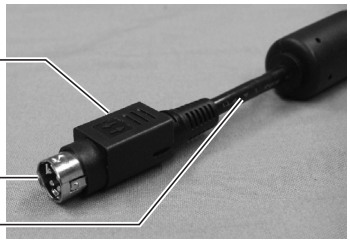
Plug the DC power cord of the AC adapter into the printer and turn on the power.

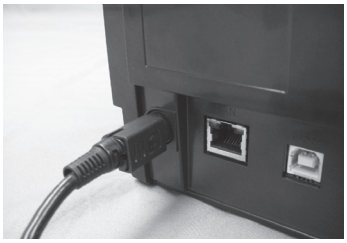
1 Connect the AC power cord to the AC adapter.



2 Connect the printer ⟶ AC adapter ⟶ AC power outlet. When plugging the DC power cord into the printer's power connector, make sure the DC power cord connector is oriented properly. When plugging in the DC power cord to the printer, use one hand to hold the printer while using the other hand to plug in the cord.







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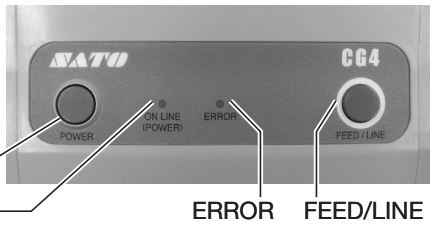
3 Press the POWER button on the operation panel of the unit. The ON LINE (POWER) lamp lights. Check that the ON LINE (POWER) lamp is lit.



POWER button

ON LINE (POWER)

ERROR FEED/LINE

4 Press the POWER button to turn off the printer. When the power is off, the ON LINE (POWER) lamp turns off.

English

⚠CAUTION

- The power cord set supplied with this printer is only for use with this printer. Do not use it for other electrical products.
- Do not operate the POWER button or plug in/unplug the power cord with wet hands. Doing so could result in electric shock.

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Basic Specifications

Model name	CG408DT	CG412DT	CG408TT	CG412TT
Printing method	Direct Thermal		Thermal Transfer (Direct Thermal/Thermal Transfer)	
Head density (Resolution)	203 dpi (8-dot/mm)	305 dpi (12-dot/mm)	203 dpi (8-dot/mm)	305 dpi (12-dot/mm)
Printing effective area	300 mm pitch x 104 mm wide			
Unprintable area	**Label** Length direction Upper: 1.5mm Lower: 1.5mm (Not including backing paper) Width direction Left: 1.5mm Right: 1.5mm (Not including backing paper) **Linerless label** Length direction Upper: 4.0mm Lower: 1.5mm Width direction Left: 1.5mm Right: 1.5mm			
Printing speed	50, 75 or 100 mm/sec 2, 3 or 4 inches/sec (Setting: 2, 3, 4) * Printing speed differs depending on paper type and usage environment.			
Paper type/ Paper shape	Roll paper (Face-out / Face-in winding) Recommended use of paper manufactured or specified by SATO.			
Paper thickness	60 to 190µm (0.06 to 0.19 mm)			
Label size	**Label** Continuous type Pitch : 7 to 300 mm (Backing paper 10 to 303 mm) Width : 22 to 107 mm (Backing paper 25 to 110 mm) Cutter type Pitch : 22 to 300 mm (Backing paper 25 to 303 mm) Width : 22 to 107 mm (Backing paper 25 to 110 mm) Dispenser type Pitch : 22 to 100 mm (Backing paper 25 to 103 mm) Width : 22 to 107 mm (Backing paper 25 to 110 mm) Tear-off type Pitch : 22 to 300 mm (Backing paper 25 to 303 mm) Width : 22 to 107 mm (Backing paper 25 to 110 mm) Linerless type (Label without backing paper) Pitch : 22 to 100 mm Width : 22 to 110 mm **Non-adhesive label** Continuous type Pitch : 10 to 303 mm Width : 25 to 110 mm Cutter type Pitch : 25 to 303 mm Width : 25 to 110 mm Tear-off type Pitch : 25 to 303 mm Width : 25 to 110 mm			

*Some restrictions may apply to the paper sizes that can be used depending on the type of paper, usage environment, and application.

English

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Model name	CG408DT	CG412DT	CG408TT	CG412TT
Outer diameter of paper roll	Maximum ø128 mm Inner diameter of paper roll core: ø40 mm (ø1.5 inches)			
Ribbon size/ Ribbon type/ Ribbon winding direction	–		Length: Maximum 100m Width: 110 mm ± 0.5 mm Outer diameter: Max.ø38 mm (Inner diameter of ribbon core: ø12.7 mm) Winding direction: Face-out winding Winding method: Ribbon core winding method *Recommended use of carbon ribbon manufactured or specified by SATO.	
Label issuing mode	Standard: Continuous mode, Tear off mode, Sensor-off mode Option: Dispenser mode, Cutter mode, Linerless mode			
Dimensions	179 (W) × 238 (D) × 173 (H) (mm) * Excluding the protrusion portion.			
Weight	1.7 kg		1.9 kg	
Power specifications	AC adapter Input power voltage: AC 100 V to 240 V ±10% (full range) Frequency: 50/60 Hz Output power voltage: DC 19 V Power consumption Input power voltage conditions: AC 100 V At peak: 50 W (at 30% printing ratio) During standby: 2.5 W			
Environmental conditions (Temperature/ Humidity)	Operating environment: 4 to 38°C, 30 to 80 % RH (However, no condensation) Storage environment: –10 to 60°C, 15 to 85 % RH (However, no condensation) (Not including ribbon, labels, and other supplies.)			
Interface	Select one of the following (The factory will provide the unit with the selected interface.) ① USB (B type) and RS-232C (D-SUB 9-pin) ② USB (B type) and LAN (10 BASE-T/100 BASE-TX auto switching) ③ USB (B type) and IEEE1284			
Options	Cutter unit, Dispenser unit (w/ dispenser paper sensor), RTC kit, Non-cutter unit for linerless label, Simplified input Keypad, TSC Smart Keyboard, 1D barcode scanner			
LED	① ERROR: (Red) ② ON LINE (POWER): (Green)			
Operation button	[POWER], [FEED/LINE]			
Paper length detection sensor	I-mark sensor (Reflective type) Label gap sensor (Transmissive type)			
Barcode	UPC-A/UPC-E, JAN/EAN, CODE39, CODE93, CODE128, GS1-128 (UCC/EAN-128), CODABAR (NW-7), ITF, Industrial 2 of 5, Matrix 2 of 5, BOOKLAND, MSI, POSTNET, GS1 DataBar (RSS) * GS1 DataBar is the new version of RSS-14.			
2D barcode	PDF417(Ver. 2.4), MAXI code(Ver. 3.0), QR code, GS1 DataMatrix (ECC200)			

English

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English

Model name	CG408DT	CG412DT	CG408TT	CG412TT
Composite symbol	EAN-13 Composite (CC-A/CC-B) EAN-8 Composite (CC-A/CC-B) UPC-A Composite (CC-A/CC-B) UPC-E Composite (CC-A/CC-B) GS1-128 Composite (CC-A/CC-B/CC-C) GS1 DataBar Composite (CC-A/CC-B) GS1 DataBar Truncated Composite (CC-A/CC-B) GS1 DataBar Stacked Composite (CC-A/CC-B) GS1 DataBar Stacked Omni-Directional Composite (CC-A/CC-B) GS1 DataBar Limited Composite (CC-A/CC-B) GS1 DataBar Expanded Composite (CC-A/CC-B) GS1 DataBar Expanded Stacked Composite (CC-A/CC-B) * GS1 DataBar is the new version of RSS-14.			
Standard installed fonts				
Bitmap font	U font 5 × 9 dots (alphanumeric characters and symbols) S font 8 × 15 dots (alphanumeric characters and symbols) M font 13 × 20 dots (alphanumeric characters and symbols) WB font 18 × 30 dots (alphanumeric characters and symbols) WL font 28 × 52 dots (alphanumeric characters and symbols) XU font 5 × 9 dots (alphanumeric characters and symbols) XS font 17 × 17 dots (alphanumeric characters and symbols) XM font 24 × 24 dots (alphanumeric characters and symbols) XB font 48 × 48 dots (alphanumeric characters and symbols) XL font 48 × 48 dots (alphanumeric characters and symbols)			
	OCR-A 15 × 22 dots (alphanumeric and symbols) OCR-B 20 × 24 dots (alphanumeric and symbols)		OCR-A 22 × 33 dots (alphanumeric and symbols) OCR-B 30 × 36 dots (alphanumeric and symbols)	
	Simplified Chinese (2.6MB) Gothic type GB2312 24 × 24 dots			
	Korean (1.6MB) Gothic type KSX1001 16 × 16 dots Mincho type KSX1001 24 × 24 dots			
Rasterized font	CG Times (alphanumeric and symbols) CG Triumvirate (alphanumeric and symbols) CG Times Bold (alphanumeric and symbols) CG Triumvirate Bold (alphanumeric and symbols)			
Outline font	Alphanumeric and symbols			
Printing direction (Characters/ Barcode)	Characters: 0°, 90°, 180°, 270° Barcode: Parallel 1 (0°), Parallel 2 (180°), Serial 1 (90°), Serial 2 (270°)			
Barcode ratio	1:2, 1:3, 2:5, Free specification			
Magnification ratio (Characters/ Barcode)	Characters: Vertical 1 to 12 times, Horizontal 1 to 12 times Barcode: 1 to 12 times			

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Model name	CG408DT	CG412DT	CG408TT	CG412TT
Standard functions	① Status return function ② Graphic function ③ Sequential number function ④ Form overlay function ⑤ Custom character registration function ⑥ Black/white inversion function ⑦ Ruled line function ⑧ Format registration function ⑨ Zero slash switching function			
Self-diagnostic function	① Paper end detection ② Cover open detection ③ Test print ④ Ribbon end detection (for thermal transfer type only) ⑤ Cutter error (When the cutter unit is installed)			
Noise (EMC) standard	FCC15B Class B			
Safety standards	UL60950-1(2001), CSA22.2 No.60950-1-03			

English

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